THE FINE AND INDUSTRIAL ARTS IN ELEMENTARY SCHOOLS, GRADE VI

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Children in Grade VI have generally reached a stage of maturity where they are able to enjoy working with sustained purpose for a result that requires a considerable length of time for its realization and that demands thoughtful and somewhat complicated planning. They take pride in a high quality of workmanship in their production and find satisfaction in its usefulness, even though that usefulness is for the benefit of society at large and not directly for themselves. An appreciation of the beauty of well-related proportions and fine outlines is increasingly apparent. Children at this age will occupy themselves with problems of design that demand, as a book cover does, the experimental arranging of title, ornament, and other elements until the space relations are most pleasing.

In representation the children desire a knowledge of how to picture objects so they will appear to be solid and in various positions and at different angles. All these attitudes toward the manual arts are often evident earlier than the sixth year in school, but at this time they furnish sufficiently strong motives to lead the children to sustained effort for the sake of solving a problem in representation or of mastering tools and processes that these may be a means of freedom and sureness in execution, or of planning and arranging forms and colors so that the result may be pleasing to the eye.

Perhaps the most significant attitude of mind characteristic of children in Grade VI is the awakening of the desire to be connected with the activities of the outside world, and to do something worth while. Life in the country offers abundant opportunity for such occupation. Each child as he comes to suitable age can assume some responsibility, the meeting of which contributes directly to the welfare of the family. The garden, the

wood pile, the poultry yard, the kitchen, give concrete opportunities in which the relations to family welfare are immediate and evident.

In large towns and cities outlets for activities which make the boy or girl a responsible contributing factor in the social system are not so obvious. Products are bought ready made. Children become accustomed to regard things as the equivalent of money, rather than of labor. Moreover, the providing of all school supplies by the town or city often presents with its evident advantages the disadvantage of leading children to feel that the municipality is an impersonal, inexhaustible source of supply. In cities also appear in Grade VI symptoms of that deflection of children from schools into industries which reaches its height at the end of Grade VIII. The fact confronts us, that about four-fifths of all children leave school by the end of the eighth grade and go to work. The seriousness of this situation is found in the fact that these children are too young to enter vocations which call for skill or offer opportunity for development. Such occupations as those of errand boys and cash girls are typical of what is open to children in the cities. The majority appear to drift about with no industrial interests or vocational outlook and take whatever pays best. They spend important formative years in employment which offers slight prospects of advancement. This experience tends to produce an unfortunate attitude toward work as something which contains within itself no interest nor scope for realizing ambitions.

A small proportion of the children will rise through these circumstances, but not the majority, unless vocational interests and right attitudes toward work are awakened before they leave school.

The educational system with its high schools and its growing number of technical schools offers increasingly excellent industrial opportunities for those who will remain. The somewhat appallingly large proportion who do not remain makes pertinent the question as to whether schools completely fulfil their function by providing advanced opportunity for those who will take it, or whether in addition elementary schools ought not to give a

training planned definitely to awaken industrial interests and to promote industrial efficiency and satisfy the desire to do something worth while and to have a part in the world's activities. The final form which this training will take must be determined by wide experimentation, but the evident need that children should have a part in some work which develops a realization of the interdependence of individuals in modern civilization and of the responsibility of each, of the fact that what the municipality furnishes is produced or supplied by its individual inhabitants, and of the meaning of industrial life, gives some hints of the lines along which experiments should be tried.

The most promising answer yet made to this problem is that the time devoted to handwork in Grade VI, VII, and VIII should be increased to at least five hours a week, the extra time being taken from drawing, arithmetic, and physical exercise, as these activities are involved in constructive work, and that this time be devoted to making material which the city or town uses in its supply department. In this way a commercial standard would be furnished and at the same time financial complications would be avoided, and since the city can buy these materials at any time, the projects may be changed frequently enough to escape a too mechanical routine. Such work would frankly undertake the production of articles in quantity and by such industrial methods as division of labor and organization of a system by which poor work might be traced to its producer.

While such work may not supersede what is now known as manual training it may share the time with it, and it possesses certain important educational advantages. For example, supposing the project to be a portfolio, if each boy in the class makes one complete, and then the class is divided into groups and each performs a single operation, the great economy in time and material and the consequent increase in producing power is at once evident. Moreover, the repetition of a process, if not too long continued, instead of dulling the mind, awakens it to invent devices for performing these processes more rapidly and accurately. All danger of automatic routine may be avoided by the use of good judgment as to when the project shall be changed.

The interest shown by such a class when the school supply team calls to take the product is sufficient proof that the motive of personal ownership is not necessary as an inducement to do good work.[1] These contributions to the system readily awaken a new appreciation of school material in general and of all public property and its relation to individuals. Work such as this gives to the boy who goes into industrial employment a realization that any process to which he is assigned is part of a whole, and it is likely to awaken a demand on his part to know and master the whole. It is not unreasonable to hope that such "work teaching" which awakens interest in effective ways of doing things may bring discontent with unskilled occupations and a desire for more thorough industrial and technical training.

Certain dangers attending the introduction of industrial education into elementary schools readily suggest themselves, but they can scarcely exceed the dangers arising from the present lack of any suitable provision for properly satisfying the desire to come into touch with the activities of the world and the readiness to join with others in making a contribution to the general welfare.

In connection with the regular school programme the following suggestions for work in representation, construction, and design emphasize the phases which the abilities of the children seem to indicate as particularly appropriate to Grade VI.

Representation.—The use of drawing as a means of plain description should continue in connection with other school subjects. The work of Grades IV and V should have developed a habit of keen observation and correct representation of relative proportions and slants of lines in the objects drawn. That of Grade VI should develop still more power and freedom in representing the facts of form and structure. Definite progress toward this end is made when pupils develop a habit of thinking out the directions and limits of lines before these are drawn, by carrying the brush or pencil over the paper experimentally in the path the line is to take.

[1] These considerations are based largely on the results of an experiment tried in Boston by Frank M. Leavitt and described in detail by him in the *Manual Training Magazine* for June, 1908.

If the subject to be represented is a plant form the direction of the stem is thus thought out, and the location, direction, and size of the leaves are calculated stroke by stroke. This pause for a correct estimation of each movement makes certain that the child thinks about the line before instead of after he draws it. This order of procedure makes progress certain, but demands painstaking care. A great amount of earnest mental effort as well as manual practice is necessary if one learns to draw with any degree of correctness. Careless drawing is easy, but serves no valuable utilitarian or aesthetic end. Correct drawing is difficult

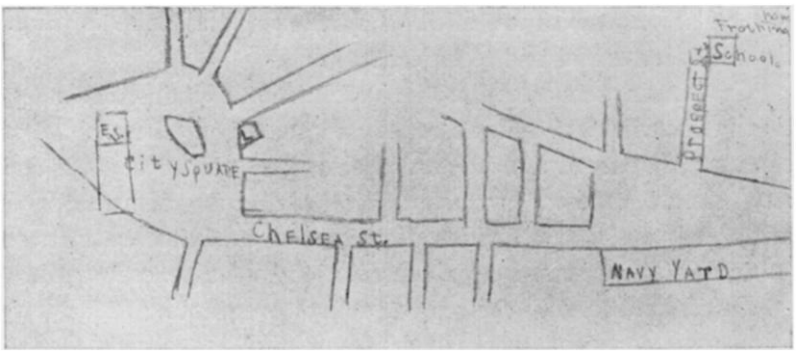

FIG. 1

to attain and the effort is not always pleasurable, but if it is undertaken in earnest the eye becomes sure in its judgment and truthful delineation grows to be a habit. This habit should be established at this time, and a proper presentation of each subject will furnish an incentive for correctness to which children readily respond. For example, maps and routes call for plain explanatory drawing in which correct proportions are a necessary framework with which no freedom can be taken. Children readily appreciate this fact and are interested to draw such routes as a stranger might depend upon in finding his way about town (Fig. 1).

Plant forms, on the other hand, involve proportions and shapes which constitute elements of beauty. Exquisite representations of plant shapes appear when the plant is held in the sunlight so as to throw its shadow on a sheet of paper, and the child stands

where he can see only the shadow. He finds the structure of stems, the shapes of large masses, the foreshortening of leaves

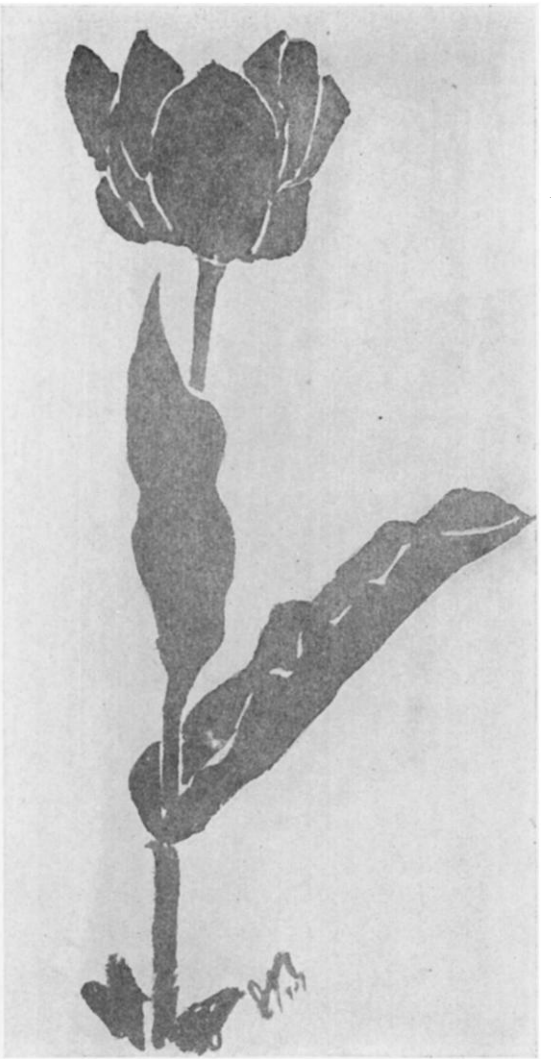

FIG. 2

and flowers, and the delicacy of grasses and thistledown perfectly translated into terms of black and white. This interpretation is a

greater incentive than the best verbal instruction. His brush and ink give results that look like shadows and he is stimulated to try to equal the perfection of the actual shadow thrown by the plant he is trying to represent (Fig. 2). The child who learns to

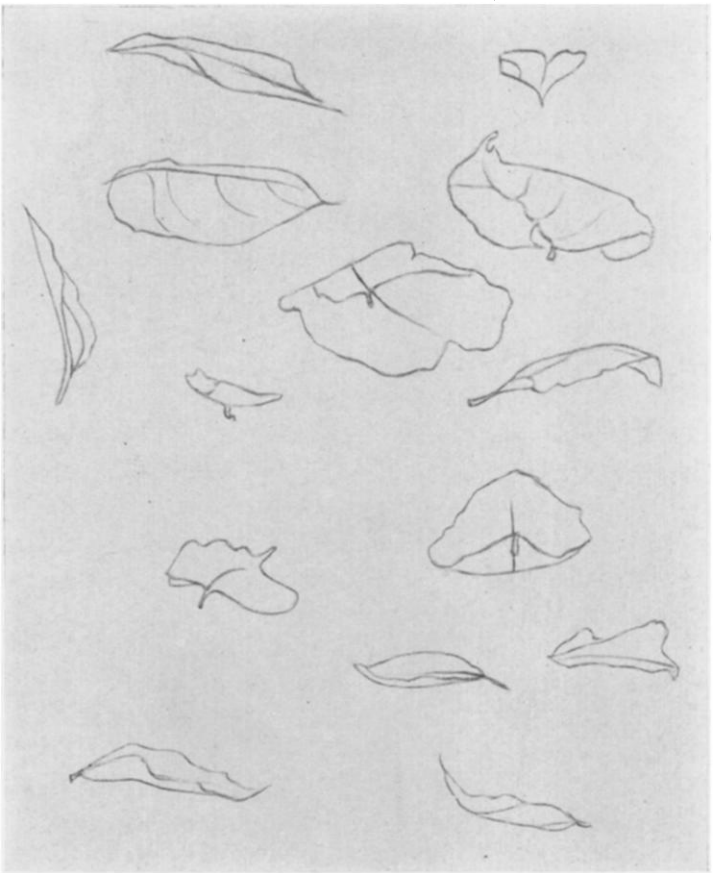

FIG. 3

represent things *as they are* gains a knowledge of form which will enable him to justify his courage when later, with increased aesthetic judgment, he ventures to alter the actual to conform to his ideal, and thus produces designs and compositions embodying natural forms.

Another subject appropriate to Grade VI is the representation of a few simple objects to show how each appears in several different positions: for example, a leaf held at various angles (Fig. 3) or a half apple turned successively in a number of directions. A topic such as this becomes a problem the solution of which the children are to work out. They are also interested in representing the solidity of objects such as boxes. One favorite juvenile method is to draw two squares and connect the corners

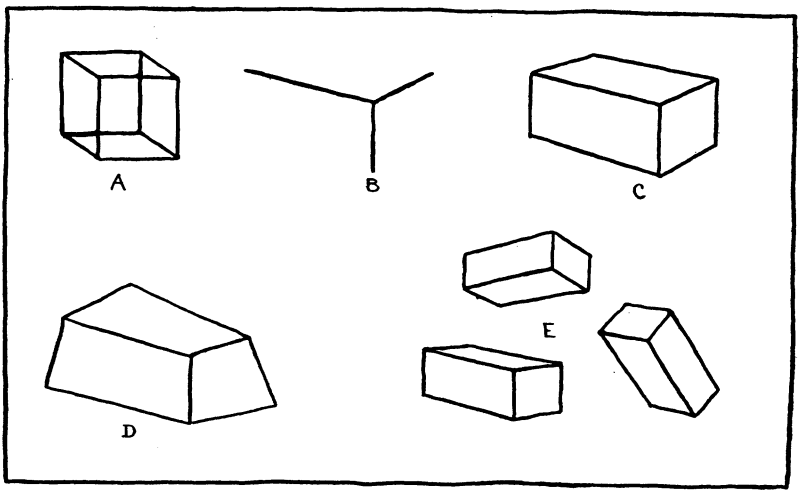

FIG. 4

(Fig. 4, *a, b*). They readily learn that three lines give the key to the structure and position of the box and that the other lines follow respectively the general directions of these (Fig. 4, *c*). Their first attempts at completing the box are frequently like Fig. 4, *d,* but practice in treating this figure as a problem in construction by trimming down the top and sides till these are satisfactory representations of rectangular faces soon results in a convincing picture of a rectangular solid. The children are then ready to experiment with different slants of the first three key lines to see the effect in changing the apparent position of the solid (Fig. 4, *e*). Nothing seems so readily to develop ability to represent rectangular solidity and later to draw from actual

objects as this constructive drawing from imagination. Mention of the principles of formal perspective, such as convergence of lines or the relation of the object to the level of the eye, does not seem to be necessary or helpful at this time.

Construction.—A desire to produce things which have a definite use, and a willingness to spend time mastering tools so that they may be utilized as an added means of dealing with material are characteristic of this grade. The making of simple mechanical apparatus, such as is involved in toys that work, and the production of things that are of evident use in the school and home are especially appropriate to this grade.

In planning courses in woodworking, Grade VI seems in most localities to be the most suitable place for introducing the children to bench work. This involves the use of tools which demand strength and skill. If bench work is postponed until this grade it comes at a time when the stimulus of new material and means of handling it are especially effective.

Two ways of organizing woodwork have been evident during the history of manual training. One prescribes a series of forms involving constructive elements and processes so graded that there is logical progression in difficulty and complexity. In some cases the problems are isolated parts of construction given for the purpose of developing technique without regard to any use to which the result shall be put, as in the Russian system. In other cases, as in sloyd, the results are objects which will be of use when completed, but so chosen as to insure a logical progress in the order of tools and processes involved.

The other method of organizing woodwork is based on the argument that a constructive problem in its entirety involves three steps: First, the idea of an object suggested by a need for it, so definite in character that the conditions shall furnish the worker with a means of reasoning out just what the size, form, and construction of the object should be to best fulfil the needs. For example, if the object is a bird house, its shape, the size of the door, and other details will be determined definitely by knowing the habits and size of the bird for which it is to be built and the locality in which it is to be placed. Secondly, after ideas of

the object in its completed form are clearly defined the most fitting method of construction should be reasoned out and patterns or working drawings made which show the number of parts needed and their exact shape and size. In this way the greater part of the constructive thinking may be done beforehand. in terms of drawings and patterns, so that work in material may be predetermined and not experimental. In actual experience elementary school pupils can seldom plan perfectly beforehand and need some experimentation with material which often modifies the first plans. Thirdly, the tools needed and the knowledge of how to use them should be provided as necessity arises.

Woodwork with bench tools is in itself so interesting and at this age so suggestive of world activities that, however it may be presented, there is seldom any lack of enthusiasm on the part of the children. In fact, every system of woodwork cites as testimony to its suitability the great interest it arouses in the children.

Children trained by the first method are likely to develop a fine consciousness of ability to deal with material and a pride in excellent construction, but to be somewhat lacking in power to plan and to design. Generally the majority of a given class produces good work. Those trained by the second method have excellent opportunity to develop judgment and ability to plan how conditions may be met, but often the majority of a given class fails in the technical skill required to put their ideas into creditable material form. A few usually produce excellent results.

In actual practice, a combination of the two methods is generally followed. The children begin with given models by means of which the class can be taught as a whole and attain a certain degree of mastery of tools. After a year or two, those who show sufficient skill to justify undertaking individual projects are allowed to do so. By this means a standard of workmanship is maintained and the desire to produce an independent piece of work acts as a strong stimulus. A class model, while requiring the same processes of all pupils, need not result in mechanical uniformity. Fig. 5 shows the variety of design available in so common a stock model as the pen tray.

The constructive work for boys and girls of Grade VI should

bring them into contact with outside industries in the home and neighborhood, for example, sewing, cooking, constructive work, agriculture, etc. Experiments along the line of industrial work which produces by industrial methods material for use in the school system promise exceedingly valuable results.

Design.—The two phases of design before described, that of practice in repeating units at consistently related intervals, and

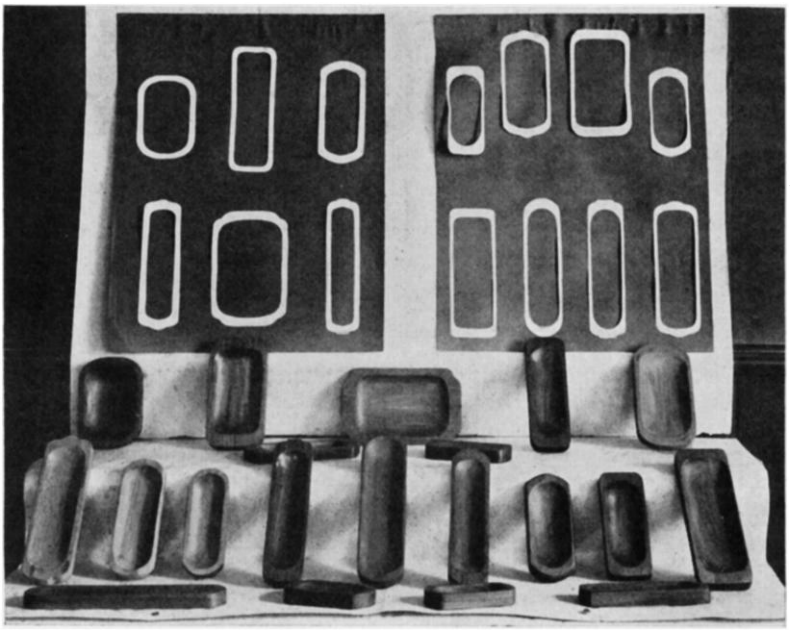

FIG. 5

that of planning and decorating objects should continue. The pupils should have practice in distributing more carefully worked-out units over surfaces. The frequent free-hand repetition of a single well-chosen unit trains judgment as to what constitutes tasteful distribution of pattern on a surface, and develops an individuality of style such as comes only when the hand repeats a well-mastered form, as in penmanship.

The projects in sewing and constructive work are among the best opportunities for design, and give scope for choice as to

the finest shapes, proportions, and decorations. For example, in the pen trays (Fig. 5) the comparison and discussion of outlines and relative proportions involve excellent problems in design. At this age appeal may be made directly to a response in terms of

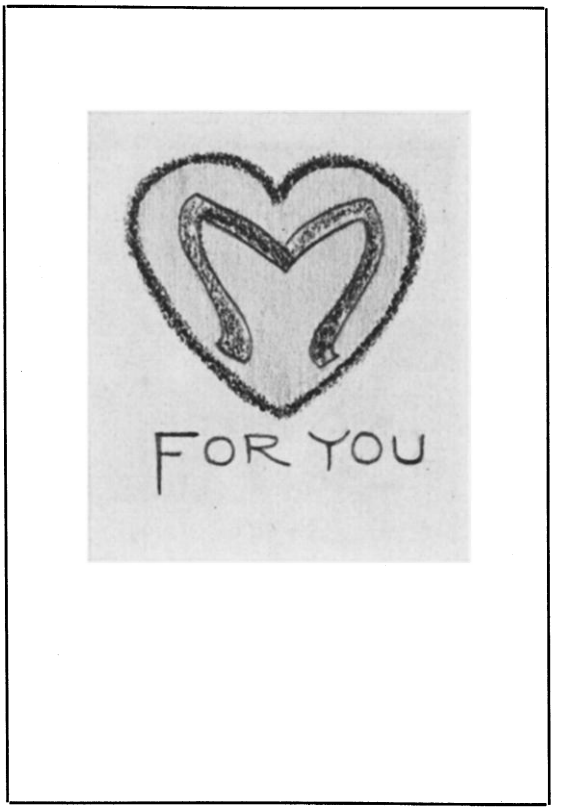

FIG. 6

aesthetic pleasure. The question, "Which looks best" generally calls forth thoughtful replies.

As in Grade V, the best results in decoration are usually obtained by limiting a problem to a few elements, as a border where the only choice is in margins and modification of corners, or a lesson cover with its printing and perhaps a monogram or other suitable ornament. Special occasions which call for invita-

tions, menus, announcements, and souvenirs, such as valentines (Fig. 6), offer opportunities for good arrangements of spaces.

Continued use of water colors develops ability to discriminate colors more accurately. The children should learn to mix paints so as to match any given sample or produce any desired color. Special emphasis may be placed upon color values or the changes in effect when a color passes into light or into dark. The children should make charts showing five values of the same color in carefully graded steps between black and white.

A reasonable standard of accomplishment has been reached at the end of the sixth year if drawing grows more free and correct, because each line is carefully calculated, and if representations of objects show their solidity and position, if more difficult tools are mastered and the children are enabled to make things which appeal to them as worth while as a contribution to general or individual needs. All such things involve intelligent planning. And the desired object is achieved if the children are able to design simple constructive problems so that the results will be not only adequate to their purpose but tasteful in form and ornament and if ability to match colors and to discriminate between different tones is increased.